AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (Withdrawn, Currently Amended) A method for promoting outgrowth of a mammalian neuron comprising ~~inhibiting the binding of an ankyrin protein of said neuron to an L1 CAM protein, by~~ contacting said neuron with ~~the~~a peptide of claim 6 ~~comprising the amino acid sequence set forth in SEQ ID NO: 2~~.

2. (Withdrawn, Currently Amended) A method for promoting extension of a mammalian neuronal cell across a substrate comprising ~~inhibiting the binding of an ankyrin protein of said neuron to an L1 CAM protein of said neuron, by~~ contacting said neuronal cell with ~~the~~a peptide of claim 6 ~~comprising the amino acid sequence set forth in SEQ ID NO: 2~~.

3. (Withdrawn, Currently Amended) A method for treating a diseases characterized by axonal damage ~~selected from spinal cord injury, traumatic brain injury, stroke, and neurodegenerative disease~~, which comprises administering to a mammal in need of such treatment an effective amount for treating said diseases of ~~the~~a peptide of claim 6 ~~comprising the sequence set forth in SEQ ID NO: 2~~.

4. (Withdrawn, Currently Amended) The method of ~~C~~claim 3, wherein the mammal ~~said subject~~ is a human.

5. (Canceled)

6. (Currently Amended) An isolated peptide derived from the ankyrin binding domain of an L1-CAM family member protein comprising an amino acid sequence ~~consisting of~~ QFNEDGSFIGQF (SEQ ID NO: 2), wherein said peptide promotes neurite outgrowth.

7. (Currently Amended) The~~An isolated~~ peptide of claim 6 comprising an amino acid sequence ~~consisting of~~ QFNEDGSFIGQF (SEQ ID NO: 2) linked to ~~an isolated peptide comprising~~

an amino acid sequence ~~of~~ RQIKIWFQNRRMKWKK (SEQ ID NO: 6), wherein said sequences~~peptides~~ are linked by a disulfide bond.

8. (Withdrawn, Currently Amended) An isolated nucleic acid encoding the peptide of claim 6 ~~comprising an amino acid sequence consisting of SEQ ID NO: 2~~.

9. (Withdrawn, Currently Amended) A method of inhibiting neuronal signaling in a mammal which comprises disrupting the interaction between L1-CAM, ankyrin, and voltage-gated calcium channels, by contacting a neuron with the~~a~~ peptide of claim 6 ~~comprising the amino acid sequence set forth in SEQ ID NO: 2~~.

10. (Withdrawn, Currently Amended) A method for treating pain in a mammal comprising ~~disrupting the interaction between L1-CAM, ankyrin, and voltage-gated calcium channels in a subject in need of such treatment, which comprises~~ administering to the mammal an amount effective for the treatment of pain of the~~a~~ peptide of claim 6 ~~comprising the sequence set forth in SEQ ID NO: 2~~.

11. (Withdrawn, Currently Amended) The method of claim 10 wherein said pain is ~~comprises~~ chronic pain.

12. (Withdrawn, Currently Amended) The method of claim 10 wherein said mammal ~~subject~~ is a human.

13. (Withdrawn, Currently Amended) The method of claim 10 ~~14~~, which comprises administering the peptide ~~composition~~ locally in the vicinity of the affected neurons.

14. (Withdrawn, Currently Amended) The method of claim 10 ~~14~~, which comprises administering the peptide ~~composition~~ with an osmotic pump.

15. (Withdrawn, Currently Amended) The method of claim 14 ~~18~~, which comprises situating the osmotic pump for administration of the peptide ~~composition~~ to a region of the dorsal spinal cord.

16. (Withdrawn, Currently Amended) A method for preventing neuronal cell death after an ischemic attack or stroke in a mammal comprising ~~disrupting the interaction between L1-CAM, ankyrin, and voltage-gated calcium channels in a subject in need of such treatment [which comprises~~ administering to the mammal ~~a subject in need of such treatment for~~ an amount effective for the prevention of neuronal cell death of ~~the~~a peptide of claim 6 ~~comprising the amino acid sequence set forth in SEQ ID NO: 2 in a subject in need of such treatment~~].

17. (Withdrawn, Currently Amended) A method for blocking neuronal calcium flux in a mammal comprising disrupting the interaction between L1-CAM, ankyrin, and voltage gated calcium channels ~~in a subject in need of such treatment~~ by contacting a neuron with the peptide of claim 6.

18. (New) A pharmaceutical composition comprising the peptide of claim 6 and a pharmaceutically acceptable carrier.

19. (New) An isolated peptide consisting essentially of an amino acid sequence QFNEDGSFIGQF (SEQ ID NO: 2), wherein said peptide promotes neurite outgrowth.

20. (New) The peptide of claim 19 consisting of an amino acid sequence QFNEDGSFIGQF (SEQ ID NO: 2).

21. (New) A pharmaceutical composition comprising the peptide of claim 19 and a pharmaceutically acceptable carrier.

22. (New) The peptide of claim 6 which comprises a targeting sequence which allows translocation of the peptide across the plasma membrane and into the cytoplasm of cells.

23. (New) The peptide of claim 22, wherein the targeting sequence comprises an amino acid sequence RQIKIWFQNRRMKWKK (SEQ ID NO: 6).

24. (New) The peptide of claim 23 consisting of an amino acid sequence RQIKIWFQNRRMKWKKQFNEDGSFIGQF (SEQ ID NO: 3).

25. (New) The method of claim 3, wherein the disease is selected from the group consisting of spinal cord injury, traumatic brain injury, stroke, and neurodegenerative disease.